

1.9  
64892 Br

COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS

U. S. Department of Agriculture  
and State Agricultural Colleges  
Cooperating.

Extension Service, Office of  
Cooperative Extension Work,  
Washington, D. C.

BOLL WEEVIL CONTROL

Excerpts from 1922 Annual Reports  
of State and County  
Extension Agents.

---

This circular is one of a series issued  
by the Office of Cooperative Extension  
Work as a part of its informational ser-  
vice to State and county extension work-  
ers, and was compiled at the request of  
T. Roy Reid, Director of Extension Ser-  
vice, Arkansas. The material contained  
herein is not released for printed  
publication.

---

Brief No. 5.

Compiled by the Reports Section

August, 1923.

U. S. Department of Agriculture  
Bureau of Agricultural Economics  
Washington, D. C.

Information received from  
State Agricultural Experiment Stations  
Washington, D. C.

SOIL FERTILITY CONTROL

Abstracts from 1935 Annual Reports  
of State and County  
Experiment Stations

This circular is one of a series issued  
by the Office of Information, Agricultural  
Economics, as a part of the Information ser-  
vice to State and county experiment sta-  
tions, and was compiled as the result of  
a survey of the Director of Extension ser-  
vice, Agricultural Economics. The material contained  
herein is not released for printed  
publication.



# BOLL WEEVIL CONTROL.\*

Excerpts from 1922 Annual Reports  
of State and County Extension Agents.

	Page		Page
Arkansas		South Carolina	
District agent.....	2	Barnwell County.....	7
Georgia		Extension director.....	7
Cotton specialist.....	2	Greenville County.....	7
District agents.....	3	Texas	
Troup County.....	5	De Witt County.....	8
Whitfield County.....	5	Fort Bend County.....	8
Oklahoma		Grimes County.....	8
LeFlore County.....	6	Harrison County.....	8
Wagoner County.....	7	San Patricio County.....	8

## Arkansas

With the boll weevil has come a closer study of cotton production. Through the county agent the value of selected varieties of cotton has been an outstanding demonstration, which will result in communities using only one or two of the leading early varieties for the coming year. The value of these early maturing varieties under boll weevil conditions has proved remarkable from the income standpoint. Money income stands out well in favor of only a few varieties, these varying slightly in the different counties. Demonstrations have established the fact that far greater yields can be made through the use of fertilizer under boll weevil conditions. - J. E. McKell, District Agent, 310 Donaghey Building, Little Rock.

## Georgia

Calcium arsenate demonstrations were conducted by county agents on 164 farms with a total acreage of 8,103, and it is the unanimous opinion of all agents reporting that cotton can be raised successfully in spite of the weevil if poison is used according to instructions. A majority of the demonstrators dusted for the first time when cotton was beginning the square. The average yield was 750 pounds per acre and most of the demonstrators report 75 per cent gain. The early destruction of stalks is important as one of the means of keeping the boll weevil damage down as low as possible, and the most satisfactory way to destroy the stalks is to plow them under with a tractor and disc plows. Mule drawn disc plows do excellent work, but ordinary two-horse turn plows do not cover the stalks very well unless they have been cut or broken with a sharp stalk cutter or a disc harrow. - Frank C. Ward, Cotton Specialist, Athens.

\*No attempt is made to cite all references to boll weevil control in this circular. Only selected extracts showing typical methods employed and results secured in some States are included. Owing to differences in terminology used in the various States and to other local conditions, the information contained herein should be reviewed by the State subject-matter specialist concerned before incorporating any part of it in the extension plans for the State.



In Crisp County for the first time real attention has been given by farmers, bankers and business men to the matter of stalk destruction in order to drive weevils from the fields.

Only two poisoning tests were tried in Dougherty county. The one started late turned out well. There were 30 acres dusted and 30 used as a check. Four dustings were made. The dusted yielded 28 500-pound bales and the undusted yielded only 12 bales of similar weight. On the other plat of one acre three of the eight applications washed off. Squares were picked on dusted and undusted plats. The dusted gave 633 pounds of seed cotton on poor land against 430 pounds on similar land where plants were not dusted. All farmers in the county using hired labor were induced to plow under their cotton stalks before frost and to seed the land with rye or oats.

In Ben Hill county, poisoned demonstrations on three 30-acre fields gave 855 pounds of seed cotton against 525 on unsprayed plats. Fertilizer test showed the value of quick responding fertilizer, such as 9-2-6.

In Dooly county, poisoning with calcium arsenate is started early, about the time the cotton is chopped out, when less than a pound per acre will reach the weevils as they feed at the terminal buds of the plants. At this time usually two applications a week apart are all that is needed. As the ground warms, rapid cultivation controls the situation until about the middle of June when moisture increases the weevils, then the real fight begins. This season the most successful crop in the county was made by a man who personally did the spraying with a hand gun. Twenty-five acres in cotton to three plows, and 24 bales yield was the result Mr. Burch got by doing the poisoning himself. Beginning about June 20 and getting over the 25 acres every four days for four times curtailed the weevils to such an extent that the bulk of the lint was picked out before weevils became numerous in the field again. Planters generally have now learned that July is usually a rainy month, consequently, the bulk of the planting is now done in March instead of April so as to get as many bolls as possible grown to safety before wet weather sets in. A dry August and continued cultivation lets the cotton open and picking is begun in September and practically completed by the middle of October. We have tried various mixtures during the past season. It was noted, however, that where farmers followed directions and used specification calcium arsenate cotton was made. The local press, banks, doctors, preachers, and merchants were all solicited by the county agent to make stalk destruction a topic of daily conversation from September 1, and it worked.

In Sumter county, continuous work was done through the growing season on poisoning with calcium arsenate to control the boll weevil. Many farmers sought advice by calling at office, many fields were visited and instructions given as to time and method of application. Where instructions were followed closely good results were secured. More cotton stalks are being destroyed early this fall than ever before in the fight against the weevil.

In Twiggs county, the most outstanding accomplishment of the year was no doubt the success obtained in combating the boll weevil by the use of calcium arsenate in powdered form. Eight farmers were selected to do this work and five of them reported very favorable after keeping an accurate record. Ex-Congressman Dudley M. Hughes of Danville, Georgia, reported 10 bales on 12 acres and the extra cost for poisoning was \$6.00 per acre. Two of the others were equally as good and the rest of the demonstrations were profitable. They had a decided increase over the unpoisoned where all other conditions were similar. The extreme necessity of destroying the cotton stalks by cutting and plowing them under as soon as the crop was gathered was called to the attention of farmers by word and letter.



Lamar County had a boll weevil meeting in March at the city hall and there were about 100 cotton farmers present. Mr. Manus of the State Board of Entomology was with us and gave a very instructive talk about poisoning the boll weevil. Some of our farmers got very much interested and when the car of calcium arsenate sent out by the State Board of Entomology arrived we secured 5200 pounds. I selected six good farmers with whom to carry on definite demonstrations in poisoning the boll weevil. We treated 17<sup>1</sup>/<sub>4</sub> acres of cotton using an average of 14 pounds of arsenate per acre. The average yield was 680 pounds of seed cotton per acre against an approximate average of 200 pounds per acre where no poison was used or improved methods followed.

Experiments in Calhoun county last year proved that a good yield of cotton was possible where the fall feeding of the weevils was cut off by destroying the stalks after all the cotton had been picked, and an active and vigorous campaign was put on this year to get the farmers to destroy their stalks. Articles were printed in the weekly papers and posters and circular letters were sent out in an effort to show every farmer in the county that it was to his best interest to destroy his stalks. This information and warning was sent out early in October and at the time this report is made fully 40 per cent of the cotton stalks in this county have been cut, plowed under or plowed up.

Cotton dusting demonstrations were conducted in four communities consisting of 1500 acres in which 10 farmers participated. On some of the plats the poison was applied at regular intervals while on others it was applied when the weevils made their appearance on the plants. Then again, applications were made when the cotton was from three to five inches high, while on other plats no poison was applied until the cotton had begun to put on squares and bolls. Check rows were left in several of the fields to determine the actual profit of the tests. Possibly the most advertised of the demonstrations was that on the farm of J. S. Cowart of the Arlington District. The total acreage in this test was 800 and was poisoned from three to seven times during the season at an average cost of \$375.00 per hundred acres including the cost of poison and equipment. No cost was added for labor due to the fact that no more labor was used in making this crop than had been used on the same farm the previous years. A very poor stand of cotton resulted in a low yield so far as acreage is concerned, but the individual stalks showed that the poison controlled the weevils from 65 to 100 per cent and the yield was increased over the neighboring farms from 5 to 85 per cent. Where the stand was good and the soil fertile a yield of a bale to the acre was realized, and where the soil was poor the yield was reduced to as low as one-fifth bale per acre. The test brought out the following facts:

1. Do not poison until boll weevils are seen on the cotton at work.
2. Begin poisoning as soon as the weevils are seen although the cotton is only three inches high. Get the first weevils.
3. Use nothing but a horse drawn machine if over 10 acres are to be poisoned.
4. Use calcium arsenate or the specification prescribed by the United States Department of Agriculture.
5. Apply the poison late in the evening, at night, or soon in the morning.
6. Do not apply the poison in the day time when cotton is dry and the wind blowing. - J. A. Johnson, District Agent, Macon.



The use of calcium arsenate in the fight against the boll weevil was practiced by the farmers of five counties in the Piedmont section of Georgia, with very satisfactory results. Nine carloads were used in Elbert county and a reasonably large crop of cotton was made this year. In Lincoln county, four demonstrations with calcium arsenate on eight acres in one test made eight bales; on three acres which were dusted with the poison the yield was 3,300 pounds of seed cotton against 740 pounds on the undusted three acres. The cost of dusting in this case was \$3 per acre. - T. L. Asbury, District Agent, Augusta.

Eleven farmers were selected in the more thickly settled communities of the county and demonstrations along the line of dusting with calcium arsenate for boll weevil control work and a more intense system of cultivation, together with better balanced fertilizers, were arranged for and carried out. The following is a detailed description of how I carried out this work:

1. The eleven farms would average about 60 acres of cotton per farm.
2. Clay loam soil.
3. College No. 1 Improved Christopher, Wanamaker - Cleveland, Poulnot and Over-the-Top were the varieties used. (Over-the-Top and College No. 1 are leaders.)
4. Dates of planting ranged from April 20 until May 10. (Early planting best).
5. The first picking was done the last days of August.
6. The cotton was bunching to square when the first dust was applied. Three applications of dust four days apart completely rid our fields of weevils until the migratory period commenced, which was July 20 in this county.
7. Cart machines and hand dust-guns were used. The dust was applied when needed and this was not the same time on any two fields. Our supply of dust was limited and we were compelled to abandon parts of a few fields and concentrate our efforts on an acreage that we thought the dust would take care of through the season. Those farmers are more completely convinced than the others and are great advertisers of the work. - M. F. Gaddis, County Agent, La Grange, Troup County.

The campaign had in view to get better varieties of cotton introduced, have farmers adopt the right methods in growing the crop, and to use calcium arsenate. The farm bureau purchased for the farmers 400 bushels of College No. 1 and Cleveland Big Boll cotton seed. Sixty-one farmers planted these seeds and reports have been received from 40, showing very satisfactory results. Twenty-five farmers started the use of calcium arsenate, but owing to the fact that the supply became exhausted, only eight of these demonstrations were carried to completion, and on these the yields were from 300 to 400 pounds more cotton per acre than the adjoining fields. While only a few farmers started the use of calcium arsenate a large majority of them did make a fight on the boll weevil. They did everything we asked them to do except use the poison. Results have been very gratifying and this county has made more cotton this year than in any one year within the last three. Our yield will probably be 1000 more bales of cotton than in 1921. - Eugene Baker, County Agent, Dalton, Whitfield County.



Oklahoma

The following are some of the details of calcium arsenate dusting demonstrations in the boll weevil control work carried on in LeFlore county in 1922:

Mr. B. B. Smith, Poteau, Okla., bought 500 pounds of calcium arsenate to dust 25 acres of bottom land cotton, and one two-row machine. I supervised the dusting. It was the first work started in the county and he began dusting the 25 acres on the night of July 3. We planned to dust every fourth night until the third application was on, then wait about two weeks for the fourth application. Mr. Smith's cotton was dusted according to this plan as far as the dew, rainfall and velocity of the wind would allow. Some nights the weather would not allow the dusting to be done on schedule time, some dustings were delayed four or five nights longer. This would apply all the way through in all the work; it couldn't be helped. Any way Mr. Smith got on three applications and did not put on the fourth application. He used about 12 pounds of the poison to the acre for the entire season and got a yield of 1008 pounds to the acre on this 25 acres, or a gain of 258 pounds per acre of seed cotton as the average production here on the same kind of land not dusted was about 750 pounds per acre. The cost was about \$3.50 per acre to dust, not figuring the labor. These are wholesale prices; the retail price would run approximately \$4.70 on the same basis.

Record of dusting: J.A. Johnson, Shady Point, Okla.; two acres; first application July 5; second, July 14; third August 3; 4th application-none. Upland; variety, Mebane; dry weather during dusting period. Per cent of infestation beginning first application 15 per cent; lacked cultivation; damaged by drought. Results: Dusting area produced 1,753 pounds seed cotton; the check two acres alongside the dusted area produced approximately 850 pounds seed cotton - a gain of 803 pounds for the dusted plot. - Garrett McClure, Rock Island, Okla., one acre; calcium arsenate applied July 21 and 25 and August 4 and 17. Upland, variety Acalia; 10 per cent infested at time of first application. Badly damaged by drought and weevils; land on dusted area quite a lot better quality than check plot. Results: Dusting area produced 847 pounds of seed cotton against 597 pounds on the acre not dusted. - W. H. Westmoreland, Howe, Okla., one acre in corner of 15-acre field. Dust applied July 7, 12, 15, and August 2; rain washed last application off; 5th application August 5, twenty per cent infested; upland, variety Rowden; badly damaged by drought and weevils. Result report: Dusting acre produced 600 pounds seed cotton; check acre alongside, produced same amount. This acre at one time, about August 15, showed excellent condition, but after the effect of the last dusting was gone, weevils from the large surrounding acreage took it. This was checked by the State entomologist on August 10 and he was very much pleased with the condition of the dusting at that time. - J. B. Ford, Monroe, Okla., two acres; dust applied July 6, 11, 15, and 31; bottom land; variety Rowden. Had two rains during periods of application but these did not come at the time to ruin application. Results: One half bale to acre on dusted area; undusted area the same. This demonstration had a good showing for excellent results on August 15, but after the effects of the poison died, the weevils from the surrounding cotton took it, the dusted area being in the corner of about eight acres. - Carl M. West, County Agent, Poteau, LeFlore County.



The low yield in cotton was due to boll weevil infestation. We tried several things in an attempt to control the weevil but with little success with one exception. We had a few demonstrators and cooperators who took their families into the fields, gathered the punctured squares and burned them. This was repeated four or five times. One farmer reports that he treated 10 acres of his 20-acre crop this way and on the 10 acres so treated he harvested 1000 pounds of seed cotton to the acre while the other cotton in the same field made 400 pounds per acre. Demonstrations with the boll weevil catcher were unsuccessful. J. V. King, County Agent, Wagoner, Wagoner County.

#### South Carolina

Control of the boll weevil by the use of calcium arsenate and early destruction of cotton stalks were strongly recommended. A campaign was put on in October stressing the importance of destroying the stalks early in the fall and this campaign was an absolute success, resulting also in a considerable increase in fall plowing and more rye sown for cover crops. - H. G. Boylston, County Agent, Blackwell, Barnwell County.

In connection with the boll weevil invasion, we had a campaign last fall to bring to the attention of farmers the desirability of fall plowing under of stalks, the sowing of soil improving crops, and so forth. This campaign was continued this spring to cover such factors as preparation, varieties, fertilizers, and so forth. In addition to this six poisoning demonstrations were arranged and specialists from the United States Department of Agriculture Laboratory at Tallulah, Louisiana, were secured to supervise this work with a view to developing some reliable information regarding poisoning the boll weevil with calcium arsenate. Heretofore, we have been without sufficient data under South Carolina conditions upon which to base a recommendation regarding poisoning. - W. W. Long, Director of Extension Service, Clemson Agricultural College of South Carolina, Clemson College.

Ninety demonstrations were conducted in growing cotton. These demonstrations were designed to meet the ravages of the boll weevil and as a rule were successful. Our methods were to destroy the stalks and clean up the land thoroughly in the fall and early preparation of the seed bed in the spring with a liberal application of fertilizer made from acid phosphate tankage and either nitrate of soda or sulphate of ammonia, or both. The Wanamaker strain of Big Boll Cleveland was used in most instances. Columbia Long Staple was used on a few demonstrations. Each of these varieties showed up well under weevil conditions. Early planting, thick spacing, picking up squares, and rapid cultivation extending well up into August, constituted our program. The early infestation of the weevils was very heavy, but August was very dry and enabled us to control the weevil damage effectively. The dry weather was so severe that in many instances cotton shed excessively, but we were able on the demonstrations that were properly conducted to average about one bale per acre. On one demonstration consisting of seven acres where velvet bean vines were turned under and 800 pounds of fertilizer applied per acre nine heavy bales were produced. I believe that by next year we will have reached the point where poison can be used successfully by our most progressive farmers and I expect to advocate its use under proper conditions. - A. H. Chapman, County Agent, Greenville, Greenville County.



Texas

Arrangements were made in February with 13 farmers in different parts of the county to plant trap cotton rows which were to be poisoned and boll weevil catchers run over them when a 10 per cent infestation occurred. Due to unfavorable weather it required several plantings to get the seed up to the desired stage. Ten farmers were successful in getting these trap rows up three weeks ahead of the main crop. In every instance, the trap rows showed heavy infestation at the time the plants began to fruit, while the main crop was practically free of weevil. The rows were kept poisoned and boll weevil catcher attachments on cultivators run over them every seven days. Comparatively few weevils survive the winter if proper clean-up methods are practiced and early destruction of the stalks is important. Calcium arsenate as a poison is beyond the experimental stage, regardless of the reports to the contrary by those who have tried it, but this poison must be properly applied. - Oscar M. Lander, County Agent, Cuero, Dewitt County.

In an address before the Business Men's League by R. O. Tacklett, of Corpus Christi, boll weevil control was forcefully presented. The farmers present got some real pointers on control of this pest and practically all of them are practicing the methods advocated. These farmers have destroyed their stalks and have urged their neighbors to do likewise. H. T. McCollum, County Agent, Richmond, Fort Bend County.

There was much work done in this county during the past year to fight the boll weevil which had been so plentiful the year before. Besides encouraging early plowing and having the farmers to burn all the brush near the fence lines and in waste places, the county agent advocated, on rich soil, the use of calcium arsenate. As a result of this about 5000 acres were poisoned and the results were so satisfactory that demonstrators who used check plots put the poison on them after the third application because the infestation was so high on the unpoisoned plots. The results were very good and there will be a great deal of this work done here the coming year. - G. Hohn, County Agent, Anderson, Grimes County.

Several methods of eradicating the boll weevil were recommended. The use of calcium arsenate dusting machines and dust were demonstrated together with two different types of boll weevil catchers. The farmers were advised to practice shallow and frequent plowing and to destroy infested squares. Considerable interest was manifested in this work and it has been estimated by some to have saved two or three thousand bales of cotton for Harrison County farmers. The newspapers published articles daily and offered prizes for punctured squares. - J. E. Bloodworth, County Agent, Marshall, Harrison County.

About 3000 acres in this county were poisoned with calcium arsenate. One farmer poisoned 1200 acres and got good results; his neighbors who did not use poison made about one-eighth of a bale per acre while he made half a bale per acre. While poisoning with calcium arsenate has proved a success, the best method for this county is to destroy the stalks and starve the weevil to death. Picking is completed here in July and all the stalks can be destroyed by October 1. This is being done by our farmers. J. W. Rollins, County Agent, Sinton, San Patricio County.



Arrangements were made in February with 12 farmers in different parts of the county to plant trap cotton rows which were to be poisoned and boll weevil catches run over them when a 10 per cent infestation occurred. The weevil catches were reported weekly and it was found that the need up to the desired stage. The farmers were successful in getting these trap rows up three weeks ahead of the main crop. In every instance, the trap rows showed heavy infestation at the time the plants began to fruit, while the main crop was practically free of weevil. The rows were kept poisoned and boll weevil catches attached to the plants run over them every seven days. Comparatively few weevils survive the winter if proper clean-up methods are practiced and early destruction of the adults is important. Cotton acreage as a whole is beyond the experimental stage, regardless of the reports to the contrary, but those who have tried it, but this poison must be properly applied. - Oscar M. Laster, County Agent, Harris County.

In an address before the Business Men's League by E. O. Laster, of Corpus Christi, boll weevil control was forcefully presented. The farmers present got some real pointers on control of this pest and especially all of them are practicing the methods advocated. These farmers have destroyed their weevils and have urged their neighbors to do likewise. E. O. Laster, County Agent, Richmond, Fort Bend County.

There was much work done in this county during the past year to fight the boll weevil which had been so plentiful the year before. Besides encouraging early plowing and having the farmers to burn all the trash near the fence lines and in waste places, the county agent advocated, on each visit, the use of calcium arsenate. As a result of this about 5000 acres were poisoned and the results were so satisfactory that demonstrators who used check plots put the poison on them after the third application because the infestation was so high on the untreated plots. The results were very good and there will be a great deal of this work done here the coming year. - O. M. Laster, County Agent, Houston, Harris County.

Several methods of eradicating the boll weevil were recommended. The use of calcium arsenate baiting machines and that were demonstrated together with the different types of boll weevil catches. The farmers were advised to practice shallow and frequent plowing and to destroy infested squares. Considerable interest was manifested in this work and it has been estimated by some to have saved two or three thousand bales of cotton for Harris County. The newspaper published articles daily and offered prizes for poisoned squares. - J. E. Blackworth, County Agent, Marshall, Harrison County.

About 5000 acres in this county were poisoned with calcium arsenate. One farmer poisoned 1500 acres and got good results; his neighbors who did not use poison made about one-fifth of a bale per acre while he made half a bale per acre. While poisoning with calcium arsenate has proved a success, the best method for this county is to destroy the adults and starve the weevil to death. Flushing is considered here in July and all the adults can be destroyed by October 1. This is being done by our farmers. J. E. Blackworth, County Agent, San Patricio County.